HEMORRHAGE CONTROL

RIFLES LIFESAVERS

Introduction

- Review types of injuries
- Review Tactical Combat Casualty Care
- Evaluate and control bleeding
- Take home message: **HEMORRHAGE CONTROL SAVES LIVES**

Facts and Tips

- Blood volume of the adult human body
  - Approximately 5 to 6 liters
  - Loss of as little as 2 pints may cause shock
- Field blood pressures, when palpable pulse is appreciated
  - Carotid: SBP>60 mmHg
  - Femoral: SBP>70 mmHg
  - Radial: SBP>80 mmHg

Sources of Bleeding

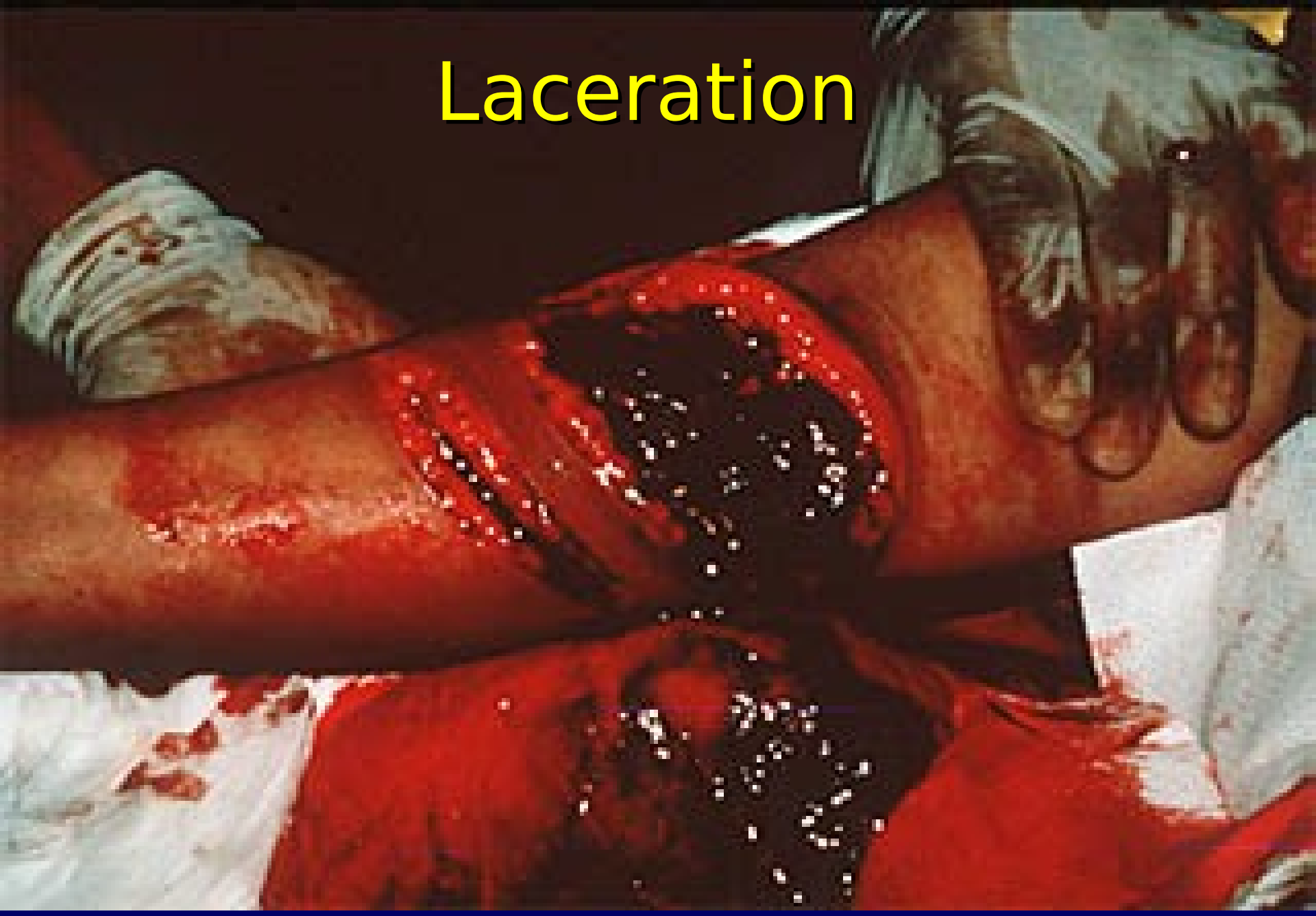
- Arterial
  - Rapid, profuse and pulsating
  - Bright red in color
- Venous
  - Steady flow, nonpulsating
  - Dark red or maroon in color
- Capillary
  - Slow and oozing
  - Often clots spontaneously, not dangerous

External Bleeding

Types of External Bleeding

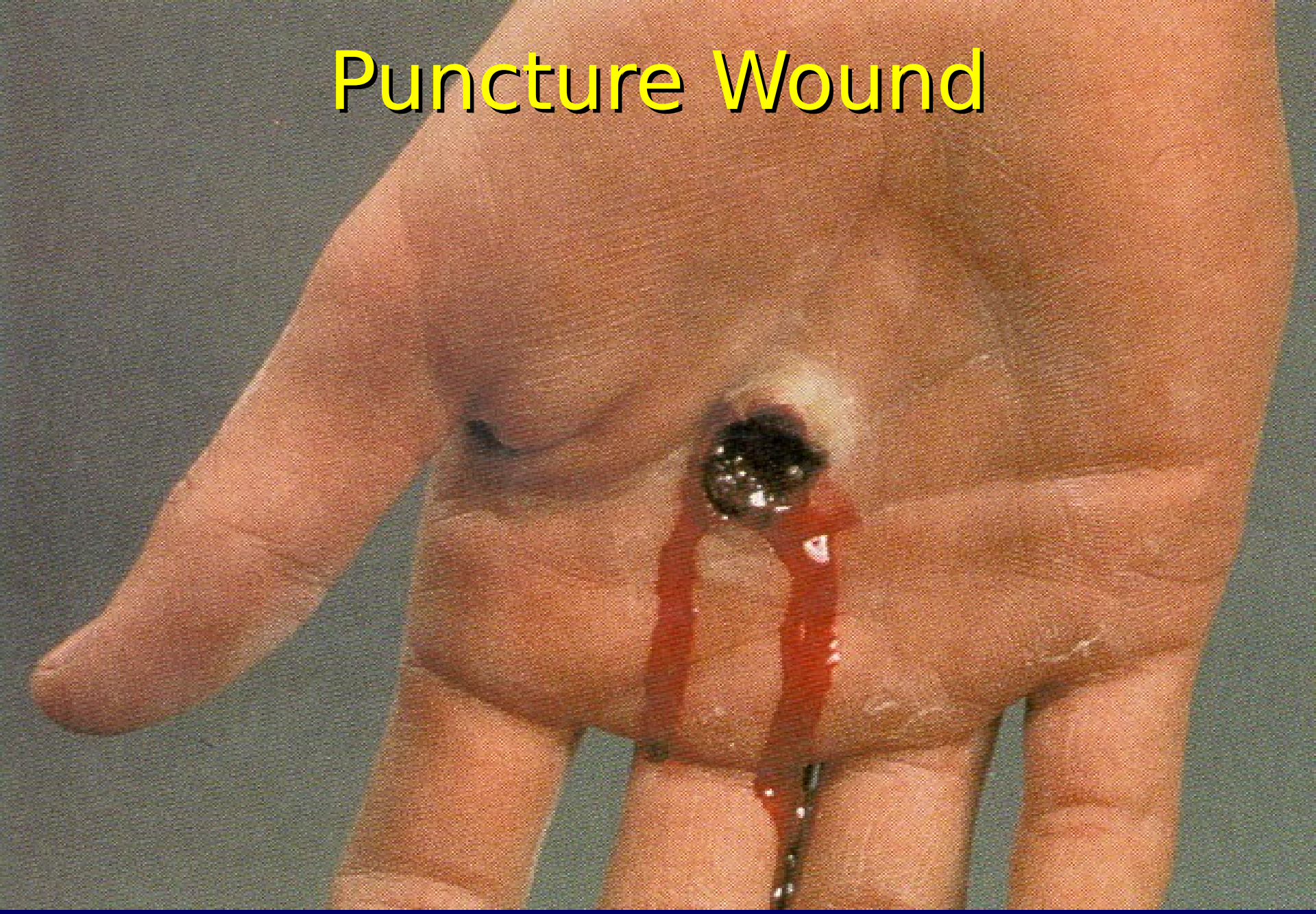
- Lacerations
- Abrasions
- Puncture wounds
- Amputations
- Avulsions

Laceration



Abrasion

Puncture Wound



Amputations

Avulsion

Internal Bleeding

- Can occur with blunt or penetrating trauma
- Suspicion based on mechanism of injury
  - Falls
  - Blast injuries
  - Penetrating trauma

Causes of Internal Bleeding

- Blunt Trauma
  - Auto vs. pedestrian
  - Motor vehicle accidents
  - Falls
  - Blast injuries
  - Etc.
- Penetrating injuries
  - Gunshot wounds
  - Stab wounds
  - Shrapnel wounds

Internal Bleeding

- Signs and Symptoms
  - Pain, tenderness, swelling, discoloration at injury site
  - Bleeding from any body orifice
  - Vomiting blood
  - Tender, rigid, or distended abdomen

Internal Bleeding

Injured Internal Organs

Internal Bleeding

- Can result in rapid progression to hypovolemic shock and death
- IV fluids may buy time
- The scalpel is the cure: The rapidly spiraling patient requires surgical intervention
- Immediate evacuation

CARE UNDER FIRE

- “The best medicine on any battlefield is fire superiority”
- Control of hemorrhage is essential since injury to a major vessel can result in hypovolemic shock in a short time frame
- 2/3 of all preventable combat deaths are due to hemorrhage from extremities

CARE UNDER FIRE

- Prompt use of tourniquets to **stop the bleeding** may be life saving
- Various types of tourniquets exist
  - Combat application tourniquet (CAT)
  - Theraband
  - Cloth and stick

TACTICAL FIELD CARE

- Evaluation begins with ABCs with attention to priorities
- Any bleeding site not previously controlled should be addressed
- Significant bleeding should be controlled using a tourniquet
- Initiate IV fluids
- Prepare for evacuation

STOP THE BLEEDING !

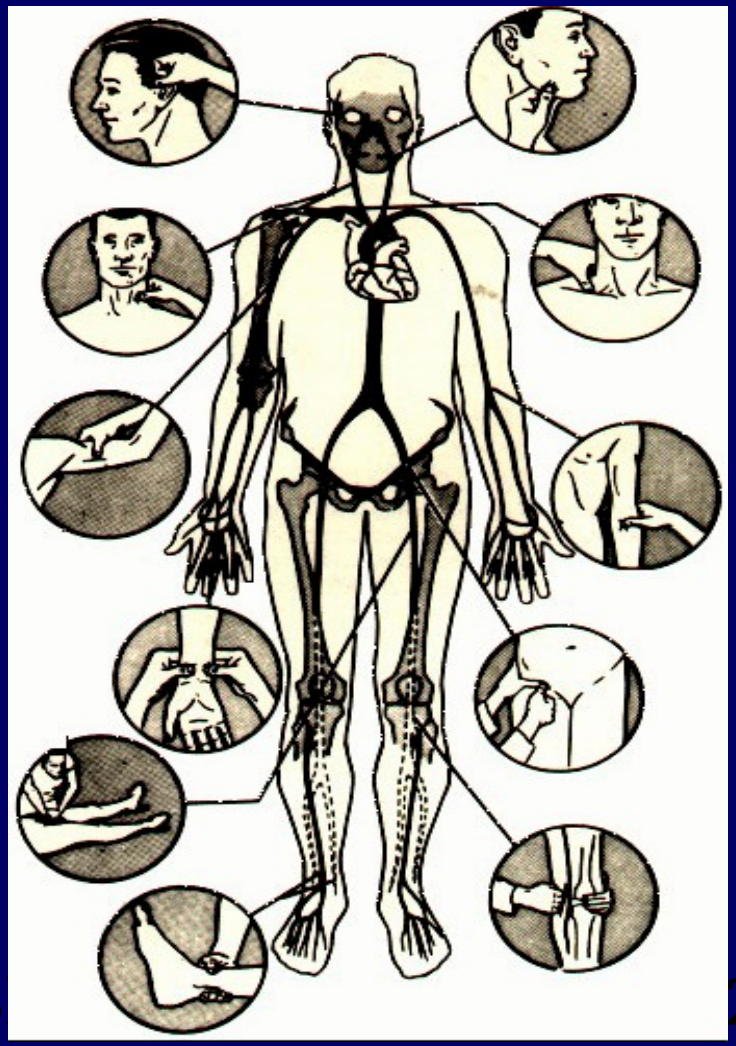
- Apply direct pressure with gauze or Israeli dressing
- Elevate the extremity above the heart
- Apply additional dressings if wound continues to bleed
- Apply pressure to appropriate pressure point if continues to bleed
- Immobilize injured extremity with a splint
- Apply tourniquet if continues to bleed
- Initiate IV fluids and treatment for shock as needed

Pressure Points

- May be helpful with severe bleeding as an adjunct
- Apply when bleeding not controlled by direct pressure and elevation
- Apply pressure to appropriate pressure point

Important Pressure Points

- Brachial
- Femoral



Brachial Pressure Point

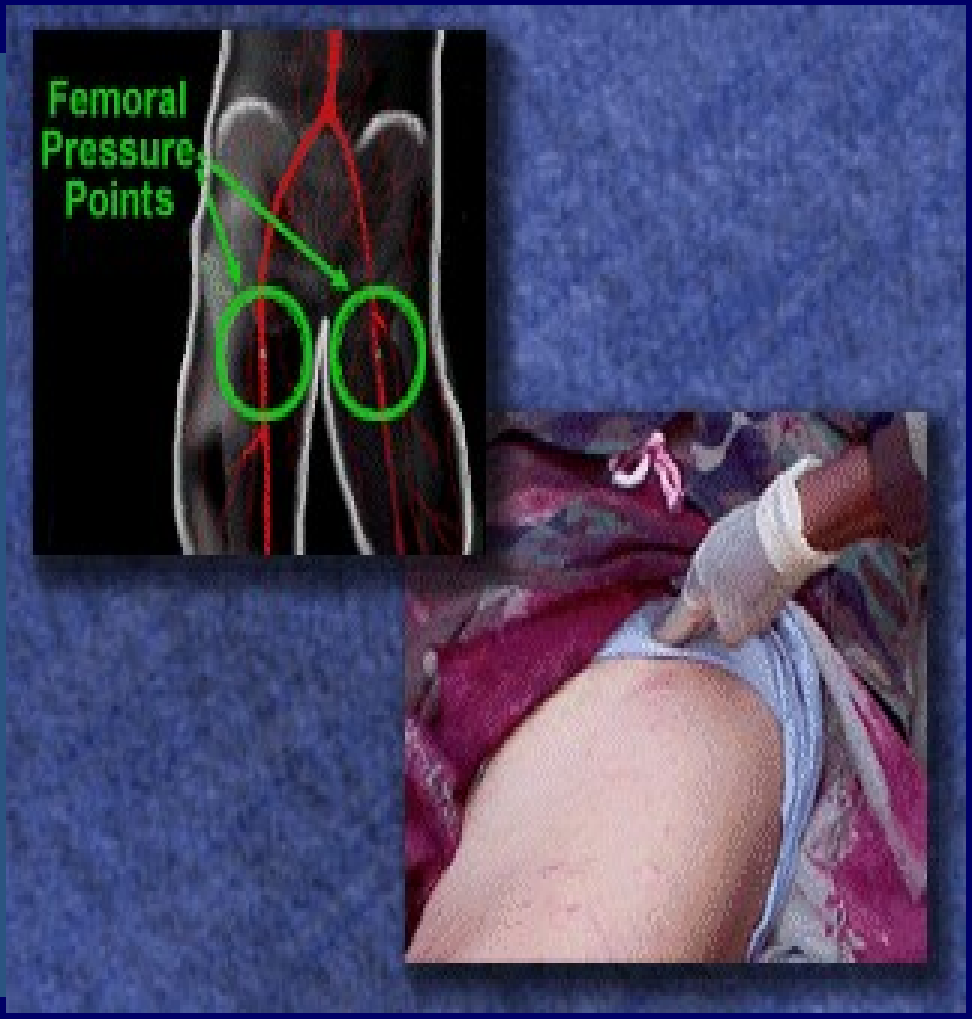
- Located in upper arm above the elbow in the groove between muscles
- Apply pressure to the inside of the arm over the bone using the fingers or thumb

Brachial Pressure Point

Brachial Pressure Point

Femoral Pressure Point

- To control severe bleeding of thigh and lower leg
- Located at front, center part of crease in the groin



Splints

- Immobilization of the injured extremity is one of the best ways to stop bleeding
- Broken bone fragments may lacerate blood vessels
- Muscular activity will increase rate of blood flow

Tourniquets

- Early use of a tourniquet in the setting of forceful arterial bleeding, such as an amputation, may be life-saving
- **STOP THE BLEEDING!**

Tourniquets

- Use a commercial tourniquet, such as the Combat Application Tourniquet, if available
- If not available, then use..
  - Cravat
  - Belt
  - Rope
  - Strap from LBE
  - Any available material

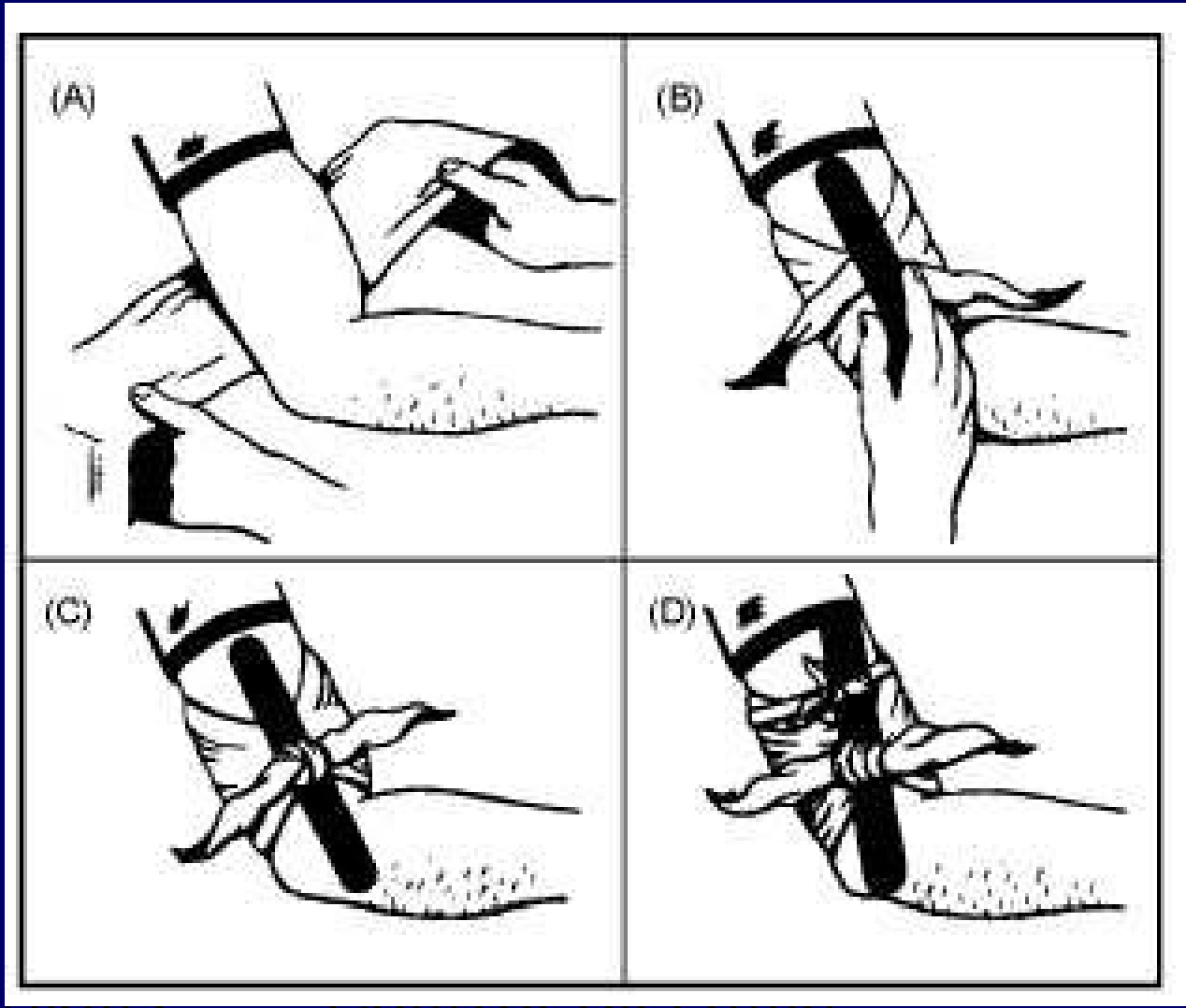
Combat Application Tourniquet

C-A-T Pat. Pending
Combat Application Tourniquet
www.C-A-Tourniquet.com
C-A-Tourniquet@ns.net.com
Warning: Only to be applied by health care professionals. Only to be used to stop life threatening bleeding when all other methods have failed. Follow all
WINDLASS
OMNI TAPE BAND
WINDLASS STRAP

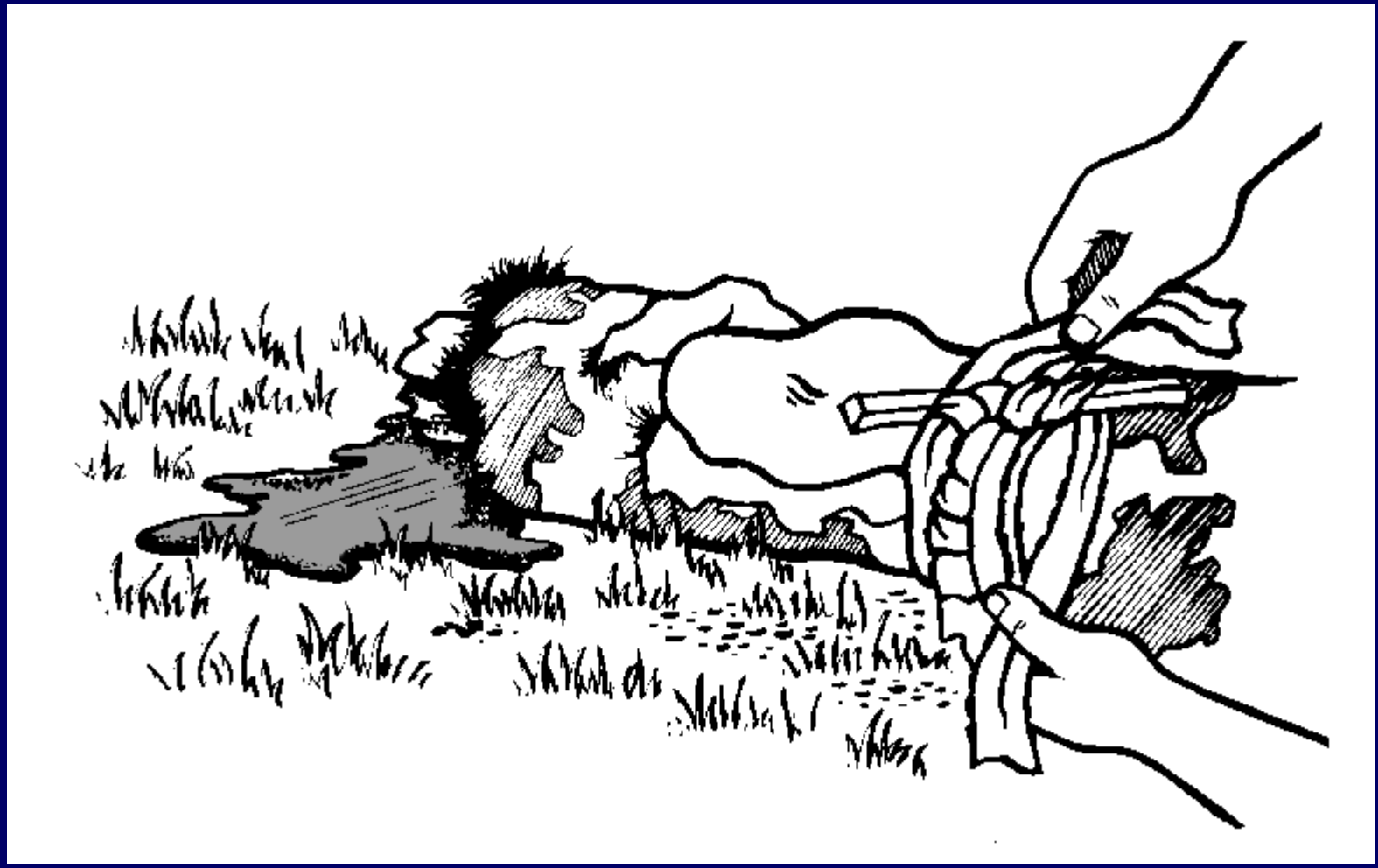
Tourniquet Application

- Place tourniquet between the heart and wound
- Wrap tourniquet around extremity
- Tighten UNTIL BLEEDING STOPS

Tourniquet Application



Tourniquet Self-Application



Tourniquet Etiquette

- Never cover a tourniquet with another dressing, etc.
- Write “T” on the casualty's forehead with pen or blood
- Never loosen or remove a tourniquet once placed

Amputation

- First, **STOP THE BLEEDING!**
- Use direct pressure, Israeli dressing, or tourniquet as necessary
- Apply dressing to cover end of the stump
  - Blood vessels may collapse, retract or curl closed and limit bleeding

Summary

- Care Under Fire: Stop significant bleeding with tourniquet while returning fire
- Tactical Field Care: ABCs with attention to stopping significant bleeding
- Evacuation Care: Treat shock with IV fluids, rapid evacuation to surgical assets
- This knowledge will save lives in Iraq, maybe your own

Questions?